

TABLE 3
SAMPLING DESIGN MATRIX
FALCON REFINERY SUPERFUND SITE
INGLESIDE, TEXAS

SAMPLING TYPE	AREA OF CONCERN NUMBER	INTERVAL (feet bgs)	ANALYSES				
			TCL VOC	TCL SVOC	TAL METALS	PCBs	Herbicides and Pesticides
ON-SITE JUDGMENTAL SURFACE AND SUBSURFACE SOIL SAMPLES AT UP TO 43 LOCATIONS							
Geoprobe	1N	0 to 0.5	12	12	12	2	2
		0.5 to 5.0	12	12	12	2	2
	1S	0 to 0.5	31	31	31	4	4
		0.5 to 5.0	31	31	31	4	4
TOTAL FOR ON-SITE JUDGMENTAL SAMPLES			86	86	86	12	12
QC FOR JUDGMENTAL SAMPLES							
QC MS/MSD* {1/20 organics}		Various	5	5	N/A	1	1
QC MS/MD* {1/20 inorganics}		Various	N/A	N/A	5	N/A	N/A
QC trip blank (1/cooler for VOCs)		N/A	8	N/A	N/A	N/A	N/A
QC field duplicate {1/10}		Various	9	9	9	1	1
QC EQUIPMENT RINSATE		N/A	5	5	5	0	0
TOTAL QC SAMPLES			27	19	19	2	2
ON-SITE RANDOM GRID COMPOSITE SURFACE AND SUBSURFACE SOIL SAMPLES AT 25 GRID LOCATIONS							
Geoprobe	2	0 to 0.5	4	4	4	0	0
		0.5 to 5.0	4	4	4	0	0
	4	0 to 0.5	1	1	1	1	1
		0.5 to 5.0	1	1	1	1	1
TOTAL FOR GRID SAMPLES			10	10	10	2	2
QC FOR GRID SOIL SAMPLES							
QC MS/MSD* {1/20 organics}		Various	1	1	N/A	1	1
QC MS/MD* {1/20 inorganics}		Various	N/A	N/A	1	N/A	N/A
QC trip blank (1/cooler for VOCs)		N/A	2	N/A	N/A	N/A	N/A
QC field duplicate {1/10}		Various	1	1	1	1	1
QC equipment rinsate		N/A	1	1	1	1	1
TOTAL GRID QC SAMPLES			5	3	3	3	3

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			TCL VOC	TCL SVOC	TAL METALS	PCBs	Herbicides and Pesticides
OFF-SITE JUDGMENTAL SURFACE AND SUBSURFACE SAMPLES AT 23 LOCATIONS							
Geoprobe	3	0 to 0.5	15	15	15	1	1
		0.5 to 5.0	10	10	10	1	1
	5	0 to 0.5	3	3	3	0	0
	6	0 to 0.5	3	3	3	1	1
		0.5 to 5.0	3	3	3	1	1
	7	0 to 0.5	2	2	2	1	1
		0.5 to 5.0	2	2	2	1	1
TOTAL FOR ON-SITE JUDGMENTAL SAMPLES			38	38	38	6	6
QC FOR OFF-SITE JUDGMENTAL SAMPLES AT 13 LOCATIONS							
QC MS/MSD* {1/20 organics}		Various	2	2	N/A	1	1
QC MS/MD* {1/20 inorganics}		Various	N/A	N/A	2	N/A	N/A
QC trip blank {1/cooler for VOCs}		N/A	5	N/A	N/A	N/A	N/A
QC field duplicate {1/10}		Various	4	4	4	1	1
QC EQUIPMENT RINSATE		N/A	2	2	2	1	1
TOTAL QC SAMPLES			13	8	8	3	3
OFF-SITE RANDOM GRID SURFACE AND SUBSURFACE SOIL SAMPLES AT 36 GRID LOCATIONS							
Geoprobe	3	0 to 0.5	36	36	36	4	4
TOTAL FOR GRID SAMPLES			36	36	36	4	4
QC FOR GRID SOIL SAMPLES							
QC MS/MSD* {1/20 organics}		Various	2	2	N/A	1	1
QC MS/MD* {1/20 inorganics}		Various	N/A	N/A	2	N/A	N/A
QC trip blank {1/cooler for VOCs}		N/A	5	N/A	N/A	N/A	N/A
QC field duplicate {1/10}		Various	4	4	4	1	1
QC equipment rinsate		N/A	2	2	2	0	0
TOTAL GRID QC SAMPLES			13	8	8	2	2

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GROUNDWATER SAMPLING (20 TEMPORARY WELLS)							
Bailer	1N	Shallow aquifer	6	6	6	1	1
	1S	Shallow aquifer	14	14	14	2	2
TOTAL FOR GRID SAMPLES			20	20	20	3	3
QC FOR AQUEOUS SAMPLES (TEMPORARY WELLS)							
QC MS/MSD* {1/20 organics}		Various	1	1	N/A	1	1
QC MS/MD* {1/20 inorganics}		Various	N/A	N/A	1	N/A	N/A
QC trip blank {1/cooler for VOCs}		N/A	2	N/A	N/A	N/A	N/A
QC field duplicate {1/10}		Various	2	2	2	1	1
QC Equipment Rinsate		Various	1	1	1	1	1
TOTAL QC SAMPLES			6	4	4	3	3
SURFACE WATER SAMPLING							
Grab	3	Surface	51	51	51	8	8
	5	Surface	3	3	3	1	1
TOTAL FOR GRID SAMPLES			54	54	54	9	9
QC FOR AQUEOUS SAMPLES (SURFACE WATER)							
QC MS/MSD* {1/20 organics}		Various	3	3	N/A	1	1
QC MS/MD* {1/20 inorganics}		Various	N/A	N/A	3	N/A	N/A
QC trip blank {1/cooler for VOCs}		N/A	8	N/A	N/A	N/A	N/A
QC field duplicate {1/10}		Various	6	6	6	1	1
QC Equipment Rinsate		Various	3	3	3	1	1
TOTAL QC SAMPLES			20	12	12	3	3

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			TCL VOC	TCL SVOC	TAL METALS	PCBs	Herbicides and Pesticides
BACKGROUND SAMPLES (JUDGMENTAL)							
Grab	Sediment	0 to 0.5	4	4	4	4	4
Geoprobe	Surface Soil	0 to 0.5	4	4	4	4	4
		0.5 to 5.0	4	4	4	4	4
Grab	Surface Water	N/A	4	4	4	4	4
TOTAL FOR BACKGROUND SAMPLES			16	16	16	16	16
QC FOR BACKGROUND SAMPLES							
QC MS/MSD* {1/20 organics}		Various	1	1	N/A	1	1
QC MS/MD* {1/20 inorganics}		Various	N/A	N/A	1	N/A	N/A
QC trip blank {1/cooler for VOCs}		N/A	1	N/A	N/A	N/A	N/A
QC field duplicate {1/10}		Various	2	2	2	2	2
QC Equipment Rinsate		Various	1	1	1	1	1
TOTAL QC SAMPLES			5	4	4	4	4
INVESTIGATION-DERIVED WASTE							
Hand sampling device	Site-wide	Drummed Waste	TO BE DETERMINED				
QC FOR INVESTIGATION-DERIVED WASTE							
QC MS/MSD* {1/20 organics}		Various	0	0	N/A	0	0
QC MS/MD* {1/20 inorganics}		Various	N/A	N/A	N/A	N/A	N/A
QC trip blank {1/cooler for VOCs}		N/A	0	N/A	N/A	N/A	N/A
QC field duplicate {1/10}		Various	0	0	0	0	0
QC Equipment Rinsate		Various	0	0	0	0	0
TOTAL QC SAMPLES			0	0	0	0	0

NOTES:

* MS/MSD and MS/MDs: These samples do not increase the number of samples, but represent additional volume of sample for laboratory QA/QC.

AOC Area of Concern
bgs Below Ground Surface
MD Matrix Duplicate
MS Matrix Spike

MSD Matrix Spike
N/A Not Applicable
PCB Polychlorinated Byphenyls
QC Quality Control

SVOC Semivolatile Organic Compound
VOC Volatile Organic Compound